



# 2019 EGG DROP GUIDELINES

## GENERAL:

The contestants shall design and build a shipping container that will prevent an uncooked chicken egg (Grade A Large) from breaking when dropped from **the first landing inside the Student Union** at an initial height of **about 11.5 ft (measured from the top of the railing)**. At the discretion of the judges, surviving eggs will then be taken **to the second floor of the Student Union (about 19.5 ft)** and dropped a second time. The container must be less than 800 cm<sup>3</sup> in volume with no single dimension longer than 25 cm. The maximum weight, including the egg, cannot exceed 1,000 grams. Contestants must be able to remove the egg without damage. A maximum of 30 seconds will be allowed to place the egg in the container and remove it to examine for any cracks/breaks.

## MATERIALS:

Any material may be used in the design, as long as the structure meets the design and contest rules as outlined below.

## DESIGN AND CONTEST RULES:

1. No kits or pre-made designs may be used. The structure must be the individual's invention. **(Tupperware is fine as its primary design was not to provide shock absorption.)**
2. The structure must be completely released (no strings or other attachments) **NO PARACHUTES!**
3. The structure must land in a designated target area.
4. No propulsion systems will be allowed.
5. No gases (i.e. helium) other than air can be present in the structure when it is weighed.
6. Volume will be calculated based on the shape of the container (inside air volume/space will not be subtracted out).

## JUDGING:

1. Grade A Large eggs will be supplied at the competition. You cannot bring your own egg.
2. All containers will be inspected by judges before they are dropped.
3. Once an egg is weighed-in with the structure, that egg cannot be exchanged with another.
4. The egg must be placed into the container on-site. A maximum of 30 seconds will be allowed to place the egg into the container and remove it. Exceeding these time limits will lead to a **15 point** deduction.
5. If the egg is damaged during placement in the container, there will be a **15 point** deduction. The contestant will have one other chance to place an egg in the timeframe without breaking the egg.

6. The egg must be undamaged after the drop in order for the score to be recorded.
7. The score will be based on the following equation:

$$S_{\text{Final}} = \frac{75S}{(W + L^2 + V)} - \text{any point deductions}$$

Where: S = the success factor with values equal:

- a) S = 100 if egg does not break **upon drop**;
- b) S = 1 if egg breaks **upon drop**;
- c) W = weight of container with egg (grams)  
(cannot exceed 1,000 grams);
- d) L = Longest dimension (cm) (no dimension longer than 25 cm)
- e) V = Volume (cm<sup>3</sup>) (can not exceed 800 cm<sup>3</sup>)

$S_{\text{Final}}$  = total points

8. The containers will be dropped from an initial height of **about 11.5 ft**. The second and final drop will be from **the second floor (about 19.5 ft)**. Only two drops will be made.
9. The winner will be determined by the container with the greatest total score.

Note: Containers must meet volume requirements to compete.

# EGG DROP COMPETITION

## Evaluation Worksheet

School Name: \_\_\_\_\_

SECME Coordinator Name: \_\_\_\_\_

Container Name: \_\_\_\_\_

Student Name: \_\_\_\_\_

Student Name: \_\_\_\_\_

Judge Name(s): \_\_\_\_\_

Date: \_\_\_\_\_

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### THIS SECTION TO BE COMPLETED ONLY BY THE JUDGES

L = Longest Dimension (centimeters)

V = Volume (cm<sup>3</sup>)

W = Weight (grams)

S = 100 points if egg does not break **upon drop**; 1 point if egg does break

Point deductions for exceeding time limit or damaging the egg **when placing in the container**: \_\_\_\_  
(15 pts each)

$$S_{\text{Final}} = \frac{75S}{(W + L^2 + V)} - \text{any point deductions}$$

$$S_{\text{Final}} = \_$$

Drop #1

Survival:      Yes      No

Drop #2

Survival:      Yes      No